

WHAT IS CLAIMED IS:

1. A method of data communication between multiple stations on a network using shared media, the method comprising the steps of:
 - assigning priorities to each station;
 - transmitting at least one burst of network communication data, each burst having a source preamble and a destination preamble associated therewith;
 - resolving collision among transmitting stations via algorithmic relationships between station priorities and source preambles; and
 - detecting a destination station via the destination preamble.
2. The method according to claim 1 wherein the step of resolving collision comprises interrogating the source preambles and station priorities and halting transmission by stations having lesser priorities among the transmitting stations.
3. The method according to claim 2 wherein the step of resolving collision further comprises switching station priorities between two transmitting stations each time the two transmitting stations collide.
4. The method according to claim 1 wherein the step of detecting a destination comprises sampling the destination preamble and storing sampled destination preamble data in a storage buffer.
5. The method according to claim 4 wherein the step of detecting a destination further comprises decoding the stored sampled destination preamble data at a station data rate.

6. A data communication system comprising:

a carrier sense and source recognition module having a data signal input and further having a plurality of source recognition outputs, the carrier sense and source recognition module configured to receive preamble source data at the data signal input and generate source data at the source recognition outputs therefrom;

a collision resolve logic module configured to receive the source data at the source recognition outputs and associate station source priorities with the source data such that the collision resolve logic can prevent further data transmission by the data communication system when the data communication system has a priority that is less than a station source priority associated with the received preamble source data; and

a destination detection module having a data signal input configured to receive and sample preamble destination data and generate a buffer write enable signal when the sampled preamble destination data is unique to the data communication system.

7. The data communication system according to claim 6 further comprising a data storage buffer having a signal input configured to receive the buffer write enable signal and further having data signal inputs such that the buffer write enable signal can cause the sampled preamble destination data to be stored in the data storage buffer.

8. The data communication system according to claim 6 further comprising an algorithmic software configured to assign unique priorities to different stations.

9. The data communication system according to claim 8 wherein the algorithmic software is further configured to exchange unique priorities between two colliding stations.

10. A data communication system comprising:
 - carrier sensing means for sensing a radio message transmitted by a transmitting and receiving station;
 - source recognition means for receiving preamble source data contained within the radio message and generating source recognition data therefrom;
 - collision resolving means for associating priority data with the source recognition data and preventing data communication by the data communication system when the data transmission system has a lower priority than the transmitting and receiving station; and
 - destination detecting means for receiving and sampling preamble destination data contained within the radio message and generating an output signal when the sampled preamble destination data is unique to the data communication system.
11. The data communication system according to claim 10 further comprising storing means for storing the sampled preamble destination data in response to the destination detecting means output signal.
12. The data communication system according to claim 11 further comprising means for assigning unique priority levels to different transmitting and receiving stations.
13. The data communication system according to claim 12 further comprising means for exchanging unique priority levels between two colliding transmitting and receiving stations whenever two transmitting and receiving stations collide.